



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,235	08/02/2001	Tomohiko Kitamura	NAK1-BP67	6016

21611 7590 05/20/2005

SNELL & WILMER LLP  
1920 MAIN STREET  
SUITE 1200  
IRVINE, CA 92614-7230

EXAMINER

HENNING, MATTHEW T

ART UNIT	PAPER NUMBER
----------	--------------

2131

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/921,235

Applicant(s)

KITAMURA, TOMOHIKO

Examiner

Matthew T. Henning

Art Unit

2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-13 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/24/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

This action is in response to the communication filed on 3/7/2005.

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

*I. Claims 1-12, drawn to a system for accessing encrypted broadcast data using a decryption key stored in memory, classified in class 713, subclass 193, subject matter wherein unauthorized access to information held in static memory elements is prevented.*

*II. Claim 13, drawn to a CPU accessing confidential data wherein the confidential data is written to one of a plurality of storage regions on a storage device, classified in class 713, subclass 200, subject matter further including means or steps for increasing a system's extension of protection of system hardware, software, or data from maliciously caused destruction, unauthorized modification, or unauthorized disclosure to or by an end user.*

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I. and II. are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has the utility of initializing a CPU after certain confidential data has been read, encrypting and decrypting data, connecting a CPU to a memory device by both a bus and a serial link, and receiving and accessing encrypted broadcast data, while invention II has separate utility such as caching confidential data in one of a plurality of storage regions of a storage device when a CPU requests access to the data. See MPEP §

806.05(d).

3. As such, Group I requires searching in class 713/1, subject matter comprising means or steps for establishing an original operating parameter or data for a computer or digital data processing system, 713/502, subject matter wherein counting is performed matter which prevents rerecording of a stored picture signal representative of a time varying object or image, and 380/264, subject matter wherein the key is extracted from a static storage device having a

Art Unit: 2131

specified location designation. Group II. does not require searching in those classes, but does require searching in class 711/118, subject matter wherein portions of the data stored in slower main memory are transferred to faster memory between processor(s) and the main memory, and class 711/123, subject matter further comprising means or steps for employing separate or partitioned cache(s) for separately storing portions of instruction data and user data, respectively.

4. Because these inventions are distinct for the reasons given above, and have acquired a separate status in the art as shown by their different classification, and as discussed in the previous paragraph, the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

5. Applicant's election of Claims 1-12 in the reply filed on 3/7/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

6. Claim 13 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/7/2005.

#### **DETAILED ACTION**

7. Claims 1-12 have been examined. Claim 13 has been withdrawn from consideration.

#### ***Title***

8. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Priority***

9. This application claims priority to Japan Applications 2001-019267, filed on 1/26/2001, and 2000-237017, filed on 8/4/2000.
10. Therefore, the effective filing date for the subject matter defined in the pending claims in this application is 8/4/2000.

***Information Disclosure Statement***

11. The information disclosure statement(s) (IDS) submitted on 3/24/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statements.

***Drawings***

12. The drawings filed on 8/2/2001 are acceptable for examination proceedings.

***Claim Rejections - 35 USC § 112***

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

15. Claim 9 recites the limitation "the encryption method" in line 5, and although it is appears through context that this limitation is referring to the encryption method determined by the broadcaster, it could be confused with the encryption method of the encryption unit. As such, one of ordinary skill in the art would be unable to determine the scope of the claim.

Art Unit: 2131

Therefore, claim 9 is rejected for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –*

*(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.*

17. Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Baltz et al.

(US Patent Number 6,058,474) hereinafter referred to as Baltz.

18. Regarding claim 1, Baltz disclosed a system integrated circuit that is incorporated into an apparatus together with a memory device (See Baltz Fig. 1B and 1C Elements 100, and 103), the memory device storing confidential data (See Baltz Col. 2 Paragraph 2), the system integrated circuit comprising: a central processing unit (See Baltz Fig. 1B Element 10); an access unit for reading and writing to and from the memory device (See Baltz Fig. 1C Element 103 and Col. 5 Line 64 – Col. 6 Line 4); an indication unit for performing an indication operation at initialization of the apparatus, the indication operation indicating to the central processing unit to start up (See Baltz Fig. 1A Element 79 and Fig. 1B Element 100 and Col. 7 Paragraph 4); and a read control unit for performing a read control operation, the read control operation controlling the access unit to read the confidential data from the memory device, wherein the read control

Art Unit: 2131

operation performed by the read control unit precedes the indication operation performed by the indication unit (See Baltz Fig. 1B Element 100 and Col. 4 Paragraph 5).

19. Regarding Claim 10, Baltz disclosed that the memory device is connected to the system integrated circuit via a bus (See Baltz Figs. 1B and 1C and Col. 4 Paragraph 5), and the access unit (a) receives the confidential data via the bus, when the read control operation is performed by the read control unit (See Baltz Col. 4 Paragraph 5), and (b) receives data or an instruction via the bus, when the central processing unit starts processing (See Baltz Col. 5 Line 64 – Col. 6 Line 4).

***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

21. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baltz as applied to claim 1 above, and further in view of Yach et al. (5,737,548) hereinafter referred to as Yach.

22. Regarding claim 2, Baltz disclosed that upon reset the DMA performed a read operation and that at some point after the read operation a reset signal was provided to the CPU (See Baltz Col. 4 Paragraph 5), however, Baltz failed to disclose a timer being used to determine when these event would occur.

Art Unit: 2131

Yach teaches that upon reset of a microcontroller, the clock is unstable and as such a clocked timer should be started in order to determine when the processor should be allowed to run (See Yach Col. 3 Lines 40-42 and Col. 6 Paragraph 3).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teaching of Yach in the microcontroller of Baltz by starting a clocked timer upon reset and using the timer to enable the CPU. This would have been obvious because the ordinary person skilled in the art would have been motivated to stabilize the clock before allowing it to control the CPU. In this combination the DMA would have provided the read signal at time 0 of the timer (See Baltz Col. 4 Lines 41-45), and the CPU would have been enabled at a predetermined time after that (See Yach Col. 3 Lines 40-42).

23. Regarding claim 3, the combination of Baltz and Yach disclosed that the indication operation is to switch an internal reset signal from an inactive state to an active state (See Baltz Col. 7 Lines 17-20).

24. Regarding claim 4, the combination of Baltz and Yach disclosed that the apparatus includes an external reset signal output unit for switching an external reset signal from an inactive state to an active state, and the counter starts counting the number of the clock pulses when the external reset signal is switched to the active state (See the rejection of claim 2 above and Fig. 1 Element 76 and Col. 4 Paragraph 5 and Col. 7 Paragraph 4).

25. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baltz as applied to claim 1 above, and further in view of Nakamura et al. (US Patent Number 6.415.371) hereinafter referred to as Nakamura.



Art Unit: 2131

26. Regarding claim 6, Baltz disclosed storing boot instructions in the external memory (See Baltz Abstract), but failed to disclose an encryption unit, a key in the memory, or encryption using the key of data being stored in the memory.

Nakamura teaches that in order to protect boot data in an external memory the memory should be provided a key code, which is read into an encryption/decryption unit and used to decrypt encrypted boot code read from the memory and to encrypt data to be stored in the memory (See Nakamura Col. 1 Line 48 – Col. 2 Line 25 and Col. 5 Lines 41-49).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Nakamura in the boot loading system of Baltz by providing the memory with a key, reading the key upon accessing the memory, and using the key to decrypt the encrypted boot code from the memory and encrypt data written to the memory. This would have been obvious because the ordinary person skilled in the art at the time of invention would have been motivated to protect the boot data from illicit access as well as to protect the system from any unwanted computer viruses.

27. Regarding claim 7, the combination of Baltz and Nakamura disclosed that the access unit reads the encrypted data from the memory device when an instruction to read the data is given by the central processing unit (See Baltz Col. 5 Line 64- Col. 6 Line 4), and the system integrated circuit further comprises a decryption unit for decrypting the read encrypted data using the device key (See the rejection of claim 6 above).

28. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Baltz and Nakamura as applied to claim 6 above, and further in view of McDonnal et al. (US Patent Number 5,699,428) hereinafter referred to as McDonnal.

Art Unit: 2131

The combination of Baltz and Nakamura disclosed a system for reading boot data from an encrypted memory (See the rejection of claim 6 above), but failed to disclose reading an encrypted user identification information and processing based on the information.

McDonnal teaches that in a boot system, a user identifier can be read from memory and used to control which boot instructions to execute according to user preference (See McDonnal Col. 18 Paragraphs 4-6).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of McDonnal in the boot system of Baltz and Nakamura by reading the user name from the list and obtaining the boot instructions according to the user name. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide the system with protection against unauthorized users as well to provide the user with the flexibility to customize the system to their preferences.

29. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Baltz and Nakamura as applied to claim 7 above, and further in view of Dwork et al. (US Patent Number 5,978,482) hereinafter referred to as Dwork.

The combination of Baltz and Nakamura disclosed encrypting and decrypting all memory accesses to the external memory (See the rejection of claim 6 above), but failed to disclose specifically encrypting already encrypted data and the doubly encrypted data twice to retrieve the plaintext data. However, Baltz did disclose that the system could be used in a video imaging system.

Dwork teaches a system for protecting video broadcast content in which the content is encrypted with a key by the broadcaster, and then broadcasts the content (See Dwork Col. 7

Art Unit: 2131

Paragraph 2). Upon reception, the encrypted content is stored and in order to access the content the user is provided the key, which is used to decrypt the content (See Dwork Col. 7 Line 23 – Col. 8 Line 15).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Dwork in the memory access system of Baltz and Nakamura by receiving encrypted content, storing the content in further encrypted form, and performing decryption twice upon access of the content. This would have been obvious because the ordinary person skilled in the art would have been motivated to protect content during transmission to the system and to protect the content from being illicitly redistributed after reception.

30. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baltz as applied to claim 1 above, and further in view of Hanes et al. (US Patent Number 6,813,725) hereinafter referred to as Hanes.

Baltz disclosed that the DMA accessed memory was located on a bus (See Baltz Col. 4 Paragraph 5) but failed to disclose the system receiving the confidential data from the memory over a serial line or other data over a serial line from the memory.

Hanes teaches that USB is becoming the standard for external devices (See Hanes Col. 1 Lines 40-54) and further teaches a system that is bootable from a universal serial bus storage device (See Hanes Detailed description Paragraph 1).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Hanes in the boot system of Baltz by using a universal serial bus memory as the external storage device. This would have been obvious because the

Art Unit: 2131

ordinary person skilled in the art would have been motivated to provide the added flexibility in the event that disaster recovery of the system was required. In this combination, all memory accesses to the device would have been performed over serial lines through the universal serial bus.

### *Conclusion*

31. Claims 1-12 have been rejected. Claim 13 has been withdrawn from consideration.

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Smyth et al. (US Patent Number 5,325,430) disclosed a system for encrypting and decrypting all data written and read from a memory, in which an key is loaded from a token upon powering up of the system, prior to initializing the system.

b. Darbee et al. (US Patent Number 4,959,810) disclosed a system for loading code data from an external memory in which the CPU of the system is disabled during the loading.

c. Locascio et al. (US Patent Number 5,402,491) disclosed a system in which a message is received while the CPU is disabled and enabling the CPU if the message is a full secure service message.

d. Welder (US Patent Number 6,473,855) disclosed a system in which data is read from memory and displayed to a user prior to loading the operating system.

e. Fallon (US Patent Application Publication Number 2001/0047473) disclosed a system in which a timer is used to control the time at which a CPU is enabled.


Art Unit: 2131

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790.

The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Matthew Henning  
Assistant Examiner  
Art Unit 2131  
5/13/2005

  
AYAZ SHEIKH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100